Green Product and Consumer Behavior: An Analytical Study

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ABSTRACT

With growing markets and increasing consumer volumes, the production, as well as consumption patterns are degrading the environment drastically. The government, consumers and producers have realised the worth of this issue. The research and development department of industries are continuously working to develop products that are environment-friendly and cause less environmental destruction. Products which are capable of being recycled, and possess healthy disposal are often termed as green products. The manufacturing, marketing, and consumption of such products are being promoted by the government as well as non-governmental organisations. The present study aims to understand the concept of green product and consumer behavior towards it. The study also investigates the relationship of green product usage and purchase intention with demographic variables (age, gender, income and educational qualification). Primary data was collected using structured questionnaires and analysed using descriptive statistics as well as Pearson's chi-square test for independence. The results reveal an important insight concerning the factors that are majorly responsible for motivating as well as demotivating consumer behavior towards green products. Environmental sustainability and personal consciousness of consumers are found to be motivating factors while unavailability and unawareness are deemed demotivating factors along with the cost of installation / usage. Consumers are intended to purchase green products irrespective of their demographics. However educational qualification is found to be the only demographic variable having a relationship with green product usage.

Keywords: Consumer Behaviour, Environment, Green Consumerism, Green Marketing, Green Product, Sustainability, Sustainable Development

INTRODUCTION

The current rapid growth in the economy and the pattern of consumption and behavior worldwide are the main causes of environmental degradation. Increasing consumption and production have burdened the environment with harmful and adversely affecting components. Grunert (1993) reported that the consumption patterns of private households account for around 40% of environmental degradation. This concern is being well addressed by the households, manufacturers, marketers as well as the government. Through research and development, new products and processes are being developed to decrease the adverse effects on the environment and build a sustainable future. Research done in the last decade (Boztepe, 2012; Chamorro, Rubio & Miranda, 2009; D'souza, 2004; Kiran, 2012; Lee, 2008; Lee, 2009; Maheshwari & Malhotra, 2011; Manaktola & Jauhari, 2007; Rahbar & Abdul Wahid, 2011)) have indicated that consumers are aware and are willing to 'Go Green'. Green product refers to a product that incorporates the strategies of recycling or is manufactured using recycled or recycleable content and/or uses less toxic material to reduce the impact on the environment.

According to Dr. Prasad Modak, the Chairman of GNPI, "green products can be defined as products which have lesser or no adverse environmental impact throughout their life cycle, as compared to any other product performing a similar function."

Accordingly, the situation in which consumers want to buy products that have been produced in a way that protects the natural environment is termed as green consumerism. Manian and Ashwin (2014, as cited in Kumar, 2015) have provided examples of green products and services in India. These include: Digital tickets by Indian Railways

- Green IT Project by State Bank of India
- Lead-free paints by Kansai Nerolac
- Wipro's green machines
- Energy-efficient light bulbs
- Energy-efficient cars
- Energy from renewable sources of energy such as windmills and solar power

Literature Review

Cherian and Jacob (2012) studied consumer's attitude towards environment-friendly products. They presented a conceptual framework of green marketing and various ways in which different consumer attributes are related to the concept of green marketing. It was concluded that there is a need for green marketing and a need for a shift in consumerbehavior and attitude towards an environmental friendly lifestyle. The researchers recommended exploring the factors that encourage consumers to cooperate with green marketing, that is, through green product usage.

D'souza, Taghian and Lamb (2006) attempted to empirically investigate how consumers who differ in terms of environmentalism respond to labels. The data was collected from 155 consumers through

telephone administered questionnaires and analysed it using descriptive measures and correlation. The findings suggest that there are consumers who would buy green products even if they are lower in quality but have environmental information on labels.

Kumar (2015) made an effort to know how we can create awareness among consumers about green marketing and to probe consumer attitude towards eco-friendly/green products. The study stressed that marketers need to emphasise on green marketing as consumers are ready to pay a premium price for green products. The major setback to green products in India is lack of education and insufficient research work in the field of eco-friendly products.

Gilbert (2007) examined the recent trends in green marketing and an offered insights into the future of green marketing. The study assessed the value that students and faculty members at the University of Wisconsin-La Crosse placed upon green marketing. It was found that UW-L does not place sufficient emphasis on green business practices. Thus, it was suggested that inclusion of green business topics in the curriculum would benefit students' attitude towards green business, ultimately benefitting the university.

Bhatia and Jain (2013) also provided a brief review of environmental issues, green products, green consumer practices and awareness level of consumers. Consumers' perceptions and preferences towards green products were analysed through structured questionnaires. The results showed that consumers are well aware of green marketing practices and products. Green values among consumers were also found to be high.

Chen and Chai (2010) compared gender with the attitude towards green products and environment. The study also investigated the relationship between consumers' attitude towards the environment and green products. Findings suggested that there is no difference in attitude towards environment and green product on the basis of gender. It was also found that the government's role and personal norms towards the environment have an impact on their attitude towards green products.

Yazdanifard and Mercy (2011) presented a comprehensive literature review to analyse the impact of green marketing strategies on customer satisfaction and environmental safety. The study concluded that green marketing is a tool for protecting the environment for the future generation, having positive environmental safety impact. Consumers want to be associated with companies that are green compliant and are therefore, willing to pay more to adapt to green products.

Sheikh, Mirza, Aftab, and Asghar (2014) investigated the consumer behavior towards green products and how they will make their green purchase decision. The data was collected from 200 respondents through questionnaire and hypotheses were tested using Pearson correlation. It was found that brand and gender difference have a very weak relationship with consumer green behavior while price, quality and green marketing have a strongly positive one.

Objectives

The present study was undertaken with the following objectives:

- To understand the concept of green product.
- To know consumers' buying intentions regarding green products.
- To know the relationship of green consumption behavior with consumer demographics.
- To know the factors motivating as well as demotivating green product usage/ purchase.

RESEARCH METHODOLOGY

The research design used for the study was a descriptive design that describes the concept of green product and the behavior of consumers with respect to it. The present study is based on primary data collected through questionnaires distributed to 170 consumers, out of which, 125 useful responses were received. The sampling was done using convenience sampling method in Aligarh and Bareilly districts of UP (West). Descriptive statistics were used to analyse the data and Pearson's chi-square test for independence was used to test the hypotheses.

Hypotheses

H_{01}: There is no significant relationship between green product usage and gender of the respondents.

H_{02}: There is no significant relationship between green product usage and age of the respondents.

H_{03}: There is no significant relationship between green product usage and educational qualification of the respondents.

H_{04}: There is no significant relationship between green product usage and income of the respondents.

H_{05}: There is no significant relationship between green product buying intention and gender of the respondents.

H_{06}: There is no significant relationship between green product buying intention and age of the respondents.

H_{07}: There is no significant relationship between green product buying intention and educational qualification of the respondents.

H_{08}: There is no significant relationship between green product buying intention and income group of the respondents.

RESULTS AND DISCUSSIONS

Descriptive Statistics

Table 1
Demographic profile of the respondents

Variable		Frequency	Percentage (%)
Gender	Male	57	45.6
	Female	68	54.4
Age	15-25	44	35.2
	25-35	69	55.2
	35-45	12	9.6
Educational Qualification	Intermediate	10	8
	Graduate	20	16
	Post graduate	69	55.2
	Doctorate	26	20.8
Income	Below Rs 2 lakhs p.a	58	46.4
	Rs 2 lakh-Rs 4 lakhs p.a	33	26.4
	Rs. 4 lakhs-Rs 6 lakhs p.a	18	14.4
	Above Rs. 6 lakhs p.a	16	12.8

Table 2
Factors motivating for green product usage/purchase

Factor	Frequency	Percentage (%)
Social recognition	25	20
Government incentives/policies	15	12
Environment sustainability	101	80.8
Personal consciousness	85	68
Peer pressure	3	2.4
Cost of installation/usage	6	4.8

Table 2 shows the factors that usually motivate the respondents for buying/using green products. It is clearly seen that environment sustainability is the most effective factor followed by personal

consciousness of the respondents that persuaded them to buy a green product. The result is partially consistent with Chen and Chai (2010) in terms of personal norms as an impactful factor in affecting attitude towards green products.

Table 3
Factors demotivating green product usage

Factor	Frequency	Percentage (%)
Unawareness	50	40
Unavailability	86	68.8
Resistance to change	13	10.4
Inefficiency perception	17	13.6
Peer/social pressure	3	2.4
Cost of installation/usage	39	31.2

Table 3 shows the main factors responsible for demotivating or hindering green product usage or purchase. Consumers mainly refrain from using green products due to their unavailability as well as unawareness about such products. However, 31.2% of the respondents feel that the cost of installation/

Table 4 shows that 65.6% of the sample is already using some or the other green products while 99.2% of them intend to purchase one of them in the near future. D'souza et al. (2006), Kumar (2015),

usage of green products is higher than regular products of the same category.

Table 4
Usage and purchase intention statistics

Variable	Usage	Percentage (%)
Green product usage	82	65.6
Purchase intention	124	99.2

Yazdanifard and Mercy (2011) also argued that consumers do have green product purchase intention.

Hypotheses Testing

Table 5
Results of chi-square test

Variables tested	Pearson chi-square value	Degree of freedom	Sig.
Gender X usage	0.022	1	0.882
Age X usage	1.49	2	0.475
Educational qualification X usage	10.888	3	0.012
Income X usage	1.121	3	0.772
Gender X purchase intention	1.203	1	0.273
Age X purchase intention	1.856	2	0.395
Educational qualification X purchase intention	5.292	3	0.152
Income X purchase intention	1.164	3	0.762

H_{01}: There is no significant relationship between green product usage and gender of the respondents.

Table 5 shows that significance of chi-square is 0.882, which is greater than 0.05 (5%). So, the null hypothesis cannot be rejected at 5% significance level, concluding that there is no significant relationship between the green product usage and gender of consumers. Consumers use green products irrespective

of their gender. The result is consistent with Chen and Chai (2010) while Sheikh et al. (2014) presented a weak relationship of gender and consumer green behavior.

H_{02}: There is no significant relationship between green product usage and age of the respondents.

Table 5 shows that significance of chi-square is 0.475 which is greater than 0.05 (5%).

So, the null hypothesis cannot be rejected at 5% significance level, concluding that there is no significant relationship between the green product usage and age of consumers. Consumers use green products irrespective of their age.

H$_{03}$: There is no significant relationship between green product usage and educational qualification of the respondents.

Table 5 shows that significance of chi-square is 0.012, which is less than 0.05 (5%). So, the null hypothesis cannot be accepted at 5% significance level, concluding that there is a significant relationship between green product usage and educational qualification of consumers.

Table 6
Usage statistics based on educational qualification

Educational Qualification	Intermediate	Graduate	Post Graduate	Doctorate
Usage Percent	20%	65%	68%	77%

Table 6 shows individual breakdown of usage pattern among consumers based on their educational qualification. It shows that 77% of the respondents who are doctorates use green products followed by post graduates (68%), graduates (65%) and lastly intermediates (20%). A very important inference is drawn here stating that educational level has a direct relation on the green product usage.

H$_{04}$: There is no significant relationship between green product usage and income of the respondents.

Table 5 shows that significance of chi-square is 0.772, which is greater than 0.05 (5%). So, the null hypothesis cannot be rejected at 5% significance level, concluding that there is no significant relationship between the green product usage and income of consumers. Consumers use green products irrespective of their income.

H$_{05}$: There is no significant relationship between green product buying intention and gender of the respondents.

Table 5 shows that significance of chi-square is 0.273 which is greater than 0.05 (5%). So the null hypothesis cannot be rejected at 5% significance level concluding that there is no significant relationship between the Green product buying intention and Gender of the consumer. The consumers intend to purchase Green products irrespective of their gender.

H_{06}: There is no significant relationship between Green product buying intention and age of the respondents.

The table 5 shows that significance of chi-square is 0.395, which is greater than 0.05 (5%). So, the null hypothesis cannot be rejected at 5% significance level, concluding that there is no significant relationship between the green product buying intention and age of consumers. Consumers intend to purchase green products irrespective of their age.

H_{07}: There is no significant relationship between green product buying intention and educational qualification of the respondents.

Table 5 shows that significance of chi-square is 0.152, which is greater than 0.05 (5%). So, the null hypothesis cannot be rejected at 5% significance level, concluding that there is no significant relationship between the green product buying intention and educational qualification of consumers. Consumers intend to purchase green products irrespective of their educational qualification.

H_{08}: There is no significant relationship between green product buying intention and income of the respondents.

Table 5 shows that significance of chi-aquare is 0.762, which is greater than 0.05 (5%). So, the null hypothesis cannot be rejected at 5% significance level, concluding that there is no significant relationship between the green product buying intention and income of consumers. Consumers intend to purchase green products irrespective of their income.

CONCLUSION

In the present era of development and growth, environment is being degraded at a rapid rate. It is hence, necessary to worry now rather than regret later. Green products can lower the negative impact on environment and ensure a sustainable future for the coming generations. The study highlighted that except for educational qualification, other demographic variables such as age, gender and income have no relationship with consumers' purchase decision of green products. Moreover, irrespective of demographic variables, most consumers intend to purchase such products to safeguard the environment. Cherian and Jacob (2012) suggest that researchers need to explore factors that motivate consumers towards green product usage. The present study finds out that, consumers are motivated to use green products because of environmental sustainability and their personal consciousness towards the environment. However, unavailability of such products and unawareness refrain them from using such products.

IMPLICATION

The results of the present study can be used by marketers, manufacturers as well as the government to promote green products efficiently. Unawareness and unavailability

of the green products should be countered so as to remove the obstacle in its usage. Advertisements and promotional activities must be taken to make people aware, focusing on the environmental aspect as it is found to be the most influential factor motivating green product purchase and usage. Moreover, personal consciousness of consumers must be given due consideration, besides promotion, as it is also found to be a motivating factor. Awareness programs of environmental degradation and benefits of green products must be launched along with the different types of such products that consumers can use.

REFERENCES

Bhatia, M., & Jain, A. (2013). Green marketing: A study of consumer perception and preferences in India. *Electronic Green Journal, 1*(36), 1-19.

Boztepe, A. (2012). Green marketing and its impact on consumer buying behavior. *European Journal of Economic and Political Studies, 5*(1), 5-21.

Chamorro, A., Rubio, S., & Miranda, F. J. (2009). Characteristics of research on green marketing. *Business Strategy and the Environment, 18*(4), 223-239.

Chen, T. B., & Chai, L. T. (2010). Attitude towards the environment and green products: consumers' perspective. *Management Science and Engineering, 4*(2), 27-39.

Cherian, J., & Jacob, J. (2012). Green marketing: A study of consumers' attitude towards environment friendly products. *Asian Social Science, 8*(12), 117-126.

D'Souza, C. (2004). Ecolabel programmes: A stakeholder (consumer) perspective. *Corporate Communications: An International Journal, 9*(3), 179-188.

D'Souza, C., Taghian, M., & Lamb, P. (2006). An empirical study on the influence of environmental labels on consumers. *Corporate Communications: An International Journal, 11*(2), 162-173.

Gilbert, A. J. (2007). The value of green marketing education at the University of Wisconsin-La Crosse. J*ournal of Undergraduate Research, 10*, 1-16.

Grunert, S. C. (1993). Everybody seems concerned about the environment: But is this concern reflected in Danish consumers' food choice? In W. F. V. Raaij, & G. J. Bamossy (Eds.), *European advances in consumer research* (pp. 428-433). Provo, UT: Association for Consumer Research.

Kiran, K. U. (2012). Opportunity and challenges of green marketing with special references to Pune. *International Journal of Management and Social Sciences Research, 1*(1), 2319-4421.

Kumar, P. (2015). Green marketing products in India. *DAV Academic Review, 1*(1), 1-12.

Lee, K. (2008). Opportunities for green marketing: Young consumers. Marketing Intelligence and Planning, 26(6), 573-586.

Lee, K. (2009). Gender differences in Hong Kong adolescent consumers' green purchasing behavior. *Journal of Consumer Marketing, 26*(2), 87-96.

Maheshwari, A., & Malhotra, G. (2011). Green marketing: A study on Indian youth. International *Journal of Management and Strategy, 2*(3), 1-15.

Manaktola, K., & Jauhari, V. (2007). Exploring consumer attitude and behaviour towards green practices in the lodging industry in India. International *Journal of Contemporary Hospitality Management, 19*(5), 364-377.

Manian, K., & Ashwin, J. N. (2014). Present green marketing-brief reference to Indian scenario. *International Journal of Scientific Research and Management, 2*(3), 51-57.

Rahbar, E., & Abdul Wahid, N. (2011). Investigation of green marketing tools' effect on consumers' purchase behavior. *Business Strategy Series, 12*(2), 73-83.

Sheikh, F. Z., Mirza, A. A., Aftab, A., & Asghar, B. (2014). Consumer green behaviour toward green products and green purchase decision. International. *Journal of Multidisciplinary Sciences and Engineering, 5*(9), 1-9.

Yazdanifard, R., & Mercy, I. E. (2011). The impact of green marketing on customer satisfaction and environmental safety. *Proceedings of International Conference on Computer Communication and Management* (pp. 637-641). Singapore: IACSIT Press. Retrieved from https://pdfs.semanticscholar.org/cb39/27334b3e89761d573caaf47cff55c22ec2d6.pdf